

## **QUESTION 1**

**Discuss communicable diseases under the following**

**Definition**

**Causative agents**

**Modes of transmission**

**Methods of preventive and control**

**ANSWER:**

**Communicable Diseases Definition:**

Communicable diseases, also known as infectious diseases, are illnesses caused by pathogens (such as bacteria, viruses, fungi, or parasites) that can be transmitted from one person to another, or from animals, food, water, or environmental sources to humans.

**Causative Agents:**

- 1. Bacteria:** Examples include tuberculosis (*Mycobacterium tuberculosis*), cholera (*Vibrio cholerae*).
- 2. Viruses:** Examples include influenza (Influenza virus), HIV/AIDS (Human Immunodeficiency Virus).
- 3. Fungi:** Examples include ringworm (*Trichophyton* spp.), candidiasis (*Candida albicans*).
- 4. Parasites:** Examples include malaria (*Plasmodium* spp.), schistosomiasis (*Schistosoma* spp.).

**Modes of Transmission:**

- 1. Direct contact:** Skin-to-skin contact, sexual contact (e.g., HIV, syphilis).
- 2. Indirect contact:** Contaminated food, water, or fomites (e.g., cholera, norovirus).
- 3. Vector-borne:** Mosquitoes, ticks, or other vectors transmit diseases (e.g., malaria, Lyme disease).
- 4. Airborne:** Droplet or airborne transmission (e.g., influenza, tuberculosis).

**Methods of Prevention and Control:**

- 1. Vaccination:** Immunization against specific diseases (e.g., measles, polio).
- 2. Hygiene practices:** Handwashing, proper food handling, and sanitation.
- 3. Vector control:** Mosquito nets, insecticides, or eliminating breeding sites.
- 4. Isolation and quarantine:** Separating infected individuals or restricting movement.
- 5. Education and awareness:** Promoting knowledge about disease transmission and prevention.

## **QUESTION 2**

**Explain the terms endemic, epidemic and pandemic giving examples**

### **ANSWER**

#### **Endemic:**

- **Definition:** A disease or condition that is consistently present and prevalent within a specific geographic area or population.
- **Example:** Malaria is endemic in many parts of sub-Saharan Africa, where it is a persistent public health problem.

#### **Epidemic:**

- **Definition:** A sudden increase in the number of cases of a disease or condition within a specific geographic area or population, usually exceeding expected levels.
- **Example:** The 2014-2016 Ebola outbreak in West Africa, which affected Guinea, Liberia, and Sierra Leone, was an epidemic.

#### **Pandemic:**

- **Definition:** A widespread of disease that affects multiple countries, continents, or the entire world, often involving a large number of people.
- **Example:** The COVID-19 pandemic, caused by the SARS-CoV-2 virus, which spread globally in 2020 and affected nearly every country.

## **QUESTION 3**

**Define and distinguish between incidence and prevalence. Explain their importance in epidemiology with examples**

### **ANSWER**

#### **Incidence:**

- **Definition:** Number of new cases of a disease or condition occurring within a specified time period.
- **Focus:** New cases.
- **Example:** Number of people diagnosed with diabetes in a year.

#### **Prevalence:**

- **Definition:** Total number of cases of a disease or condition present in a population at a given time.
- **Focus:** Existing cases and new cases.
- **Example:** Total number of people living with diabetes in a population.

#### **QUESTION 4**

**Describe the measures used in controlling communicable diseases at the community level**

#### **ANSWER**

- 1. Health Education: Raising awareness about disease transmission, prevention, and control measures.**
- 2. Vaccination Programs: Immunizing populations against specific diseases.**
- 3. Sanitation and Hygiene: Improving water quality, waste management, and promoting handwashing.**
- 4. Vector Control: Eliminating breeding sites, using insecticides, and promoting mosquito nets.**
- 5. Screening and Treatment: Identifying and treating cases, reducing transmission.**
- 6. Contact Tracing: Identifying and monitoring individuals exposed to infectious cases.**
- 7. Isolation and Quarantine: Separating infected individuals or restricting movement.**
- 8. Community Engagement: Encouraging community participation in disease control efforts.**

**These measures can be implemented through:**

- 1. Public Health Campaigns: Media campaigns, outreach programs, and community events.**
- 2. Healthcare Services: Strengthening healthcare infrastructure, training healthcare workers.**
- 3. Community-Based Initiatives: Collaborating with local leaders, organizations, and volunteers.**

#### **QUESTION 5**

**Write short notes on the following**

- A. Epidemiological triangle**
- B. Vehicle-borne transmission**
- C. Point prevalence and period prevalence**

#### **ANSWER**

##### **A. Epidemiological Triangle**

**The epidemiological triangle is a model that explains the interaction between:**

- 1. Agent (pathogen or cause of disease)**

2. Host (human or animal susceptible to disease)
3. \*Environment\* (external factors influencing disease transmission)

#### **B. Vehicle-Borne Transmission**

Vehicle-borne transmission occurs when a disease is transmitted through:

1. Contaminated food
2. Contaminated water
3. Other inanimate objects (fomites)

Examples: Cholera (contaminated water), food poisoning (contaminated food).

#### **C. Point Prevalence and Period Prevalence**

1. Point Prevalence: Proportion of a population with a disease or condition at a specific point in time.
2. Period Prevalence: Proportion of a population with a disease or condition over a specified time period.